

CLAIMS

1-72. (Canceled)

73. (Currently amended) A computer system for carrying out an interactive dialog with a user of the computer system in accordance with a predetermined rule, comprising:

a data base that stores a dictionary containing a plurality of words and a plurality of phrases;

a recognition unit that recognizes a user's input representing what the user says in response to previous output by the computer system in a currently running interactive dialog and understands what the user says from the user's input by referring to the dictionary stored in the data base;

a determining unit that determines whether a user error occurs in the user's input, the user error representing that the user's input includes a word or phrase that does not meet the predetermined rule in response to the previous output by the computer system;

a selection unit that selects a phrase or word to be used to continue the currently running interactive dialog when the user error occurs in the user's input; and

an output unit that outputs the selected phrase or word to the user so as to answer to the user's input,

the predetermined rule being defined for a word chain game, the predetermined rule comprising: that the user and the computer system alternate to output a word or phrase which has an initial letter or letters identical with the final letter or letters of the immediately previous output word,

the predetermined rule further including:

the output word or phrase has not been used since the beginning of each of interactive dialogs including the currently running interactive dialog for the word chain game, and

the output word or phrase does not end with particular predetermined letters,

the selection unit selects a phrase or word to be used to terminate the currently running interactive dialog irrespective of the determination of whether the user error occurs in the user's input, thus resulting in a user's win in the word chain game, the selected word or phrase having been used since the beginning of the currently running interactive dialog for the word chain game or ending with the particular predetermined letters,

wherein, when it is determined that the user error occurs in the user's input, the selection unit estimates an impression of the user's input based on at least one previous interactive dialog for the word chain game, allows the user error based on the estimated impression of the user's input, and selects the phrase or the word to be used to continue the currently running interactive dialog.

74. (Previously presented) The computer system according to claim 73, the user's input including a new word and a new phrase, the new word and the new phrase not being contained in the dictionary, further comprising:

a learning unit that learns the new word and the new phrase included in the user's input, when the recognition unit does not recognize the user's input because the new word and new phrase are not contained in the dictionary; and

a data base updating unit that updates the dictionary so that the new word and the new phrase are contained in the dictionary.

75. (Previously presented) The computer system according to claim 74, further comprising:

a scenario interpreter that controls a flow of the interactive dialog based on a history of the user's inputs such that topics of the interactive dialog are directed to preferences of the user,

wherein the selection unit selects words to output to the user, based on the current topics of the interactive dialog, to ensure that the interactive dialog is to be continued even when the computer system fails to recognize the user's input and finds that the user's input indicates that the user made the occurrence of the error in response to the computer system's previous output to the user.

76. (Previously presented) The computer system according to claim 75, further comprising:

an anticipating unit that anticipates a future response from the user if the word selected by the computer system be received and responded by the user.

77. (Currently amended) The computer system according to claim 76, wherein the data base further stores a plurality of words, each word having an indication of a degree of difficulty, further comprising:

a dialog management unit that stores the user's attributes, wherein

the selection unit selects the words ~~and~~or the phrases for answering to the user's input to those which have a degree of difficulty within a range of degrees of difficulty set up in accordance with the user's attributes.

78. (Previously presented) The computer system according to claim 75, further comprising:

a timer that counts an elapsed time after the output unit outputs the selected word selected by the selection unit to the user,

wherein the determining unit evaluates the degree of a user's satisfaction with a currently proceeding dialog between the user and the computer system taking into account the elapsed time counted by the timer.

79. (Currently amended) The computer system according to claim 75, further comprising:

a counter that counts a number of occurrences of an error by the computer to the word outputted by the user,

wherein the ~~selecting~~selection unit selects a wrong word that breaks the rule of the word chain game such that the user is a winner of a word chain game, if the number of occurrences of an error by the computer becomes greater than a predetermined number.

80. (Canceled)

81. (Previously presented) The computer system according to claim 73, wherein

the data base of the computer system further stores a plurality of series of words which are chained in accordance with the rules of a word chain game, and

the selection unit selects the word to output to the user by referring to the plurality of series of words stored in the data base in order not to terminate the word chain game due to a difficulty for searching a next word.

82. (Currently amended) ~~A computer program product, comprising a computer usable memory medium having a computer readable program code embodied thereon, said computer readable program code adapted to be executed by a computer system~~ readable memory medium storing a computer program that is executed by a computer system to implement a method for carrying out an interactive dialog with a user of the computer system in accordance with a predetermined rule, the computer system having a data base that stores a dictionary containing a plurality of words and a plurality of phrases, said method comprising:

recognizing a user's input representing what the user says in response to previous output by the computer system in a currently running interactive dialog and understanding what the user says from the user's input by referring to the dictionary stored in the data base;

determining whether a user error occurs in the user's input, the user error representing that the user's input includes a word or phrase that does not meet the predetermined rule in response to the previous output by the computer system in the currently running interactive dialog;

selecting a phrase or word to be used to continue the currently running interactive dialog when the user error occurs in the user's input; and

outputting the selected phrase or word to the user so as to answer to the user's input,

the predetermined rule being defined for a word chain game, the predetermined rule comprising: that the user and the computer system alternate to output a word or phrase which has an initial letter or letters identical with the final letter or letters of the immediately previous output word,

the predetermined rule further including:

the output word or phrase has not been used since the beginning of each of interactive dialogs including the currently running interactive dialog for the word chain game, and

the output word or phrase does not end with particular predetermined letters,

the selecting step selects a phrase or word to be used to terminate the currently running interactive dialog irrespective of the determination of whether the user error occurs in the user's input, thus resulting in a user's win in the word chain game, the selected word or phrase having been used since the beginning of the currently running interactive dialog for the word chain game or ending with the particular predetermined letters,

wherein, when it is determined that the user error occurs in the user's input, the selecting step estimates an impression of the user's input based on at least one previous interactive dialog for the word chain game, allows the user error based on the estimated impression of the user's input, and selects the phrase or the word to be used to continue the currently running interactive dialog.

83. (Currently amended) A method for interactively carrying out an interactive dialog between a user of a computer system and the computer system in accordance with a predetermined rule, wherein the computer system has a dictionary containing a plurality of words and a plurality of phrases, comprising steps of:

recognizing, in a speech recognition unit, a user's input representing what the user says in response to previous output by the computer system in a currently running interactive dialog and understanding what the user says from the user's input by referring to the dictionary stored in the data base;

determining whether a user error occurs in response the user's input, the user error representing that the user's input includes a word or phrase that does not meet the predetermined rule in response to the previous output by the computer system;

selecting a phrase or a word to be used to continue the currently running interactive dialog when the user error occurs in the user's input; and

outputting the selected phrase or word to the user so as to answer to the user's input,

the predetermined rule being defined for a word chain game, the predetermined rule comprising: that the user and the computer system alternate to output a word or phrase which has an initial letter or letters identical with the final letter or letters of the immediately previous output word,

the predetermined rule further includes:

the output word or phrase has not been used since the beginning of each interactive dialog including the currently running interactive dialog for the word chain game, and

the output word or phrase does not end with particular predetermined letters, and

wherein the determining step determines that the user error does not occur in the user's input when the word or phrase included in the user's input meets the predetermined rule;

the selecting step selects a phrase or a word to be used to terminate the currently running interactive dialog, thus resulting in a user's win in the word chain game, the selected word or phrase having been used since the beginning of the currently running interactive dialog for the word chain game or ending with the particular predetermined letters,

wherein, when it is determined that the user error occurs in the user's input, the selecting step estimates an impression of the user's input based on at least one previous interactive dialog for the word chain game, allows the user error based on the estimated impression of the user's input, and selects the phrase or the word to be used to continue the currently running interactive dialog.

84. (Previously presented) The method according to claim 83, the user's input including a new word and new phrase, the new word and new phrase not being contained in the dictionary, further comprising steps of:

learning the new word and new phrase included in the user's input, when the recognizing step does not recognize the user's input because the new word and new phrase are not contained in the dictionary; and

updating the dictionary so that the new word and new phrase are contained in the dictionary.

85. (Previously presented) The method according to claim 84, further comprising a step of:

determining that the currently running interactive dialog is to be continued when the computer system finds that the user's input includes a word or a phrase indicating that the user made an occurrence of an error in inputting the user's input into the computer system.

86. (Previously presented) The method according to claim 85, wherein,

in the step of determining that the currently running interactive dialog is to be continued, consideration is taken of at least one of a profile of the user, a used words in user's inputs, and response times of the user, the response time is defined as a time period from a time when the computer system has outputted the phrase to the user to answer to a previous user's input to a further time when the user's input is received by the computer system.

87. (Previously presented) The method according to claim 86, further comprising:

selecting a wrong word to break a consistency of the currently running interactive dialog so as to discontinue the interactive dialog.

88. (Previously presented) The method according to claim 87, further comprising steps of:

learning a new word and a new phrase which is not contained in the dictionary when the user's input is not recognized and not found in the dictionary by asking the user a question about the user's input and receiving a user's response until a recognition of the user's input is accomplished; and

updating the dictionary based on a user's response to the question about the user's input asked by the computer system.

89. (Previously presented) The method according to claim 84, further comprising a step of:

determining that the currently running interactive dialog with the user is to be continued based on a result of an evaluated consistency of the currently running interactive dialog with the user, wherein even if the user's input includes a word or a phrase that indicates that the user made an occurrence of the error in inputting the user's input to the computer system.

90. (Canceled)

91. (Currently amended) The method according to ~~claim 90~~claim 83, further comprising a steps of:

learning a new word when the user's input is not recognized and not found in the dictionary by asking the user a question about the user's input and receiving the user's response until a recognition of the user's input is accomplished; and

updating the dictionary based on a user's response to the question about the user's input asked by the computer system.

92. (Previously presented) The method according to claim 91, wherein

the data base of the computer system further stores a plurality of series of words which are chained in accordance with the rules of the word chain game, and

wherein outputting a word for answering the user is selected from those included in the plurality of series of words stored in the data base in order not to terminate the word chain game due to a difficulty for searching for a next word.

93. (Canceled)

94. (Previously presented) The computer system according to claim 73, wherein the recognition unit recognizes the user's input representing what the user says in response to the previous output by the computer system in the currently running interactive dialog, understands what the user says from the user's input by referring to the dictionary stored in the data base,

and estimates an impression of the user based on a response time of the user's input in response to the previous output by the computer system in the currently running interactive dialog, the response time being defined as a time period from a time when the computer system has outputted a word or phrase as the previous output in response to a previous user's input to a further time when the user's input is received by the computer system, and

wherein the selection unit selects, based on the estimated impression, a phrase or a word to be used to continue the currently running interactive dialog in response to the user's input.